#### INTERNATIONAL SEARCH REPORT

International application No. PCT/KR2004/001153

### A. CLASSIFICATION OF SUBJECT MATTER

IPC7 H01L 33/00, H01L 23/34

According to International Patent Classification (IPC) or to both national classification and IPC

#### B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H01L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Korean patents and applications for inventions, since 1975

Electronic data base consulted during the intertnational search (name of data base and, where practicable, search terms used)

# C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A, D	US 6274924 B (LUMILEDS LIGHTINGS U.S. L.L.C.) 14 AUGUST 2001 see the abstract, figure 2	1-14
A	US 6204523 B (LUMILEDS LIGHTINGS U.S. L.L.C.) 20 MARCH 2001 see the whole documents, figure 1	1-14
A	KR 2001-114224 A (GENTEX CORPORATION) 31 DECEMBER 2001 see firures 16-24	1-14
A	JP 2000-244022 A (NICHIA CHEMICLAS CO. LTD) 08 SEPTEMBER 2000 see the abstract	1-14
A	US 5748658 (MATSUSHITA ELECTRIC INDUSTRIAL CO. LTD) 5 MAY 1998 see the abstract, figure 22	1-14
1		

X See patent family annex.

- \* Special categories of cited documents:
- "A" document defining the general state of the art which is not considered to be of particular relevance
- 'E" earlier application or patent but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other
- "P" document published prior to the international filing date but later than the priority date claimed
- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
- "&" document member of the same patent family

Date of the actual completion of the international search

04 SEPTEMBER 2004 (04.09.2004)

Date of mailing of the international search report

07 SEPTEMBER 2004 (07.09.2004)

Authorized officer

KIM, Dong Yup

Telephone No. 82-42-481-5749

Name and mailing address of the ISA/KR

Name and man

Korean Intellectual Property Office 920 Dunsan-dong, Seo-gu, Daejeon 302-701, Republic of Korea

Facsimile No. 82-42-472-7140

## INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No. PCT/KR2004/001153

Patent document Publication Patent family Publication cited in search report date member(s) date US 6274924 B 14.08.2001 GB 2343548 A1 10.05.2000 DE 19945675 A1 18.05.2000 KR 2000035156 A 26.06.2000 JP 2000150967 A 30.05.2000 TW 441045 B 16.06.2001 US 6204523 B DE 19938053 A1 20.03.2001 18.05.2000 GB 2343549 A1 10.05.2000 JP 2000150968 A 30.05.2000 TW 424339 B 01.03.2001 US 2001010371 AA 02.08.2001 US 6590235 B 08.07.2003 KR 2001-114224 A 31.12.2001 CA 2373368 AA 21.09.2000 AU 200038995 A5 04.10.2000 AU 200035279 A5 04.10.2000 CA 2367011AA 21.09.2000 WO 200055914 A1 21.09.2000 US 2001026011 AA 04.10.2001 EP 1169735 A1 09.01.2002 EP 1169668 A1 09.01.2002 US 6441943 BA 27.08.2002 24.10.2002 US 2002154379 AA JP 2002539623 T2 19.11.2002 JP 2002539026 T2 19.11.2002 US 2002004251 AA 10.01.2002 US 6335548 BA 01.01.2002 EP 1169735 A4 06.08.2003 EP 1169668 A4 13.08.2003 US 6700692 B 02.03.2004 30.12.2003 US 6670207 BA US 2003168670 AA 11.09.2003 US 2003002179 AA 02.01.2003 18.02.2003 US 6521916 B US 2004084681 AA 06.05.2004 08.09.2000 09.10.2001 JP 2000-244022 A JP 3217322 B US 5748658 05.05.1998 JP 06-203403 A 22.07.1994